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ABSTRACT

Architects need to understand sociology, psychology, philosophy, education, and many other fields in order to plan professional buildings. To illustrate this point, a distinction is drawn between teaching (imparting factual knowledge) and educating (imparting general understanding or basic appreciation of the subjects studied and applying this understanding to life). After evoking the "Tower of Babel" image, this paper contrasts the social harmony of the medieval era, when cathedrals were built by entire cities and numerous artisans, with today's skyscrapers built with great wealth but devoid of meaning. Human civilization may be viewed as a continuous attempt to restore communication faculties lost in the Tower of Babel. Today's overspecialization and overdifferentiation produces graduates who know something without understanding anything else. Schooling's primary purpose should be to impart such understanding, leaving particular knowledge to higher education. Architects should build schools for the students--even though most say their school's physical structure makes little difference. Architecture is presented as an exceptional, interdisciplinary profession whose essence deserves attention in school curricula. Using games with building blocks and other aids, children should learn about structural elements such as walls, windows, and doors and express their natural creative and constructive inclinations. Clearly, closer cooperation between architecture and education is needed. (MLH)

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EDUCATORS, ARCHITECTS AND THE TOWER OF BABEL

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Paper presented at the Edusystems 2000 International Congress on Educational Facilities, Values, and Contents (Jerusalem, Israel, November 16-21, 1986).

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Educators, Architects and the Tower of Babel / Aba Elhanani

Ostensibly one would expect an architect to speak about architecture. However architects must know something about, or at least take an interest in, many other disciplines such as sociology, psychology, philosophy and, of course, education. We are called upon to possess a fair understanding of those fields for which we plan professional buildings, such as various educational institutions..

Therefore permit me to think out loud – as a layman on the subject – about the essence of education. An important distinction must be drawn between education and teaching, the two components of the discipline in which teachers and educators work in educational institutions.

What is the difference between teaching and educating? Teaching is primarily a matter of imparting knowledge – facts and figures, names and dates – all of which form a pool of data. This information pool is only temporarily retained by the students, save for that part in which the student goes into further depth as he continues his education and life. On the other hand, educating is primarily a matter of imparting general understanding – a fundamental appreciation, if you wish – of the subjects studied, and further, of the implications and application of this understanding to life. I would call an educator someone who teaches the general codes, the language of the disciplines or the spirit of the these.

Let us take for example a subject such as the history of art. The teaching a student receives in the subject will familiarize him with various styles and artists, and even with many specific works; whereas his education in the subject will teach him to understand – or at least wonder about – the

what, why, and wherefore of art. The same holds for almost any subject you wish.

There is, of course, no sharp, absolute, dividing line between teaching and educating. A good teacher, teaching the history of art, whose details will soon be forgotten, at the same time educates towards an understanding of the essence of art, beyond its specific details, an appreciation of its origins and methods, and of its very function in our lives.

Yet it seems that there are few good teachers (just as there are few good architects). The vast majority of teachers just "market" facts and numbers, and thus only instruct, but do not educate.

Acknowledging the decisive importance of educating and its priority over teaching may perhaps require us to remodel the school curriculum. There certainly are those who will claim that, "This is all well and good," but the school has a duty to fill the head of its students with a certain, well-defined amount of information, to enable them to go on to a university education. I do not have the necessary tools to counter this argument, especially considering the fact that the amount of knowledge which a person needs today is growing at a monstrous rate. Nevertheless it seems to me that perhaps, for that very reason, it would be better for pre-university education, from nursery school through high school, to lay special emphasis on the educational approach, as opposed to the instructional approach whose main concern is to "cram in as much information as possible."

Here allow me to quote a few, selected verses from the book of Genesis, chapter 11:

> And the whole earth was of one language and of one speech... And they said one to another: 'Come, let us make brick, and burn them thoroughly.' And they had brick for stone, and slime had they for

> mortar. And they said: 'Come, let us build us a city, and a tower, with its top in heaven, ...' And the Lord came down to see the city and the tower, which the children of men builded. And the Lord said: 'Behold, they are one people, and they have all one language; and this is what they begin to do; and now nothing will be withholden from them, which they purpose to do. Come, let us go down, and there confound their language, that they may not understand one another's speech.' ... Therefore was the name of it called Babel; because the Lord did there confound the language of all the earth; ...

This intriguing story tells of a daring project of architectural engineering, of building a city and erecting "a tower with its top in heaven," – a sort of sky-scraper which, if it stood complete, would surely dwarf Manhattan. We read of men who made bricks and of those who burned them; and surely there were also program writers, architects, city planners, an impressive staff of consultants, as well as promoters and financiers – everything necessary for building a city with a soaring tower.

Is it not significant that at the very beginning of history – directly after the flood – mankind reached such amazing achievements: a level of technological cooperation, initiative and daring sufficient to alarm the Heavens?

But the key to this story lies in the very first verse: "And the whole earth was of one language and of one speech." This was apparently the source of their strength.

Another story from a period much closer to our own is that of the Middle Ages. In Lewis Mumford's famous book, *The Culture of Cities*, we learn about the social harmony which reigned in that era, when cathedrals were built by entire cities. Building a cathedral took several generations,

and involved a wide variety of artisans: stonemasons, blacksmiths, carpenters, painters, and sculptors; nor was there much distinction between artists and artisans; all were united in the ideal of building a cathedral, and this ideal, it seems, gave them the common language which is so essential for a great creative endeavor. Whether or not Mumford's idyllic description is historically accurate, it enables us to conjure up in our mind's eye the essence of these cathedrals, perhaps the most sublime works of a large number of people, joining together to build the Towers of Babel of their own era, a time in which the towers were not built as a threat to Heaven, but as a glorification of Heaven.

Skyscrapers, the cathedrals of our day, are not built on an ideal. They are built in exaltation of wealth and riches and do not reflect the harmony of a community. Here, indeed, the vast gulf of difference between the accomplishments of the past and the achievements of today is fully eminent. In recent years doubts have arisen as the to human significance of these lofty towers. Many people see in them the dehumanization of man and of human civilization. Yearnings towards the past are ever growing, perhaps because we long for the eras of social harmony, eras in which at least the remnants of a common language still reigned, when humanistic education was still in fashion and in use.

Indeed, one may view human civilization – science, literature, philosophy, and all other arts – as a continuous attempt at restoring the faculty of communication which was lost in the Tower of Babel. But while bemoaning the loss of communication in prose and poetry, in music and dance, in painting and sculpture, in all walks of life, we proceed to give strength to the trend towards differentiation. Specialization rules supreme

and everyone makes do with a poor fragment of the enormous fabric of knowledge which grows larger from day to day.

The plague of specialization deepens knowledge of the particular and excludes broader understanding. Thus biologists know almost everything about biology – or, rather, about one of its branches – and (save for some exceptional individuals) they have not the least understanding of, nor aspiration to understand, the nature of other disciplines.

Differentiation is steadily increasing, and the proliferation of disciplines is beginning to resemble the reproductive method of amoebas. We are living in an era in which we educate our children to know something without understanding anything else. People are born and die in a narrow field, without the least awareness of many other fields, and for the most part without even knowing of their existence.

It seems that pre-university schooling, from nursery school through high school, has a duty to educate young citizens and prepare them for the future in the broadest possible manner, to give them an understanding of life and of the world. Here is the only forum which can – and indeed must – train them to have mutual understanding, or perhaps, more properly, shared understandings of life, nature, and the universe.

Therefore it seems to me that the primary purpose of schools is to impart such understanding, and to leave the greater part of particular knowledge to the schools of higher education, where young men and women will come as educated, not ignorant, people, and thus will be able to learn the details out of an understanding of the generality. This, it seems, would be of benefit to them and to the world in which we live. Then perhaps we shall return somewhat to the situation before the Tower of Babel and shall have, once more, a common language.

I am an architect and not an educator. I have aired my views on education primarily as a preface (albeit a long one) to a deeper understanding of the structure of educational institutions.

When we set out to design a school, we ask for whom is the school? For the teachers? For the principals? For the students?

It is ostensibly clear that schools should be built for the students, with the teachers guiding them and implementing the pedagogical program. This program in turn is written by other people, experts in education. They in turn are influenced to no small extent by the group of people dictating instructions to them, by the politicians, and so on and so forth. All the requirements of the pedagogical program are translated by another group of people – those who draft the programs for buildings. The programs written in the language of program writers are translated by architects into the language of architecture – into areas and spaces and their inter-relations, under the watchful, but not always understanding, eye of a body of people attending the planning, some of whom are professionals and some of whom are program writers, and some of whom are neither; and behold, you have a veritable Tower of Babel. Perhaps there are differences in the structure of the tower from country to country, but I would guess that the measure of confusion is similar.

With all due respect to these various bodies, from policy makers to architects and planners, it must said that each was reared and educated on a different language, and that there is no satisfactory way to bridge them all. The final product – the school facility – may or may not measure up to the hopes of the program writers, may or may not satisfy the policy makers, may or may not swell the ego of the planners, and lastly is handed over to

the use of the girls and boys who must study in it, whether they like it or not.

Surveys have shown that in the students' eyes the physical structure of their school makes little difference, for they do not understand the language of structure; and likewise for the majority of program writers, the majority of policy makers, etc. Nor is there any guarantee that the planners understood the language of the pedagogical program, if they ever examined it at all.

Of course one may say that a similar situation pertains for the majority of cultural institutions; yet educational institutions differ from the rest. For here – within their walls – the politicians of the future, the policy-makers in education, the educators and teachers, the program writers, and, of course, the architects, grow up. Therefore this is the place – the only place – for creating a language shared by all, so that when the day comes that they sit across the table from one another, they shall be able to hold coherent communication with one another.

Architecture is an exceptional profession, and perhaps that explains why there is so little awareness of its essence, even among well-educated people.

Architecture lies in the broad field intersecting art and the sciences, or, call it technology; perhaps for this reason it finds a place in neither. The arts regard it as their "poor relation", of lesser importance; whereas the scientists view it as a sort of inferior applied art. The emphasis, however, is not on the denegrating attitude, but rather, on the lack of understanding, on the lack of knowledge; hence also the source of disrespect. Architecture speaks the language of areas and spaces and inter-relations, the language of materials and colors, the language of logic and know-how, but also the

language of painting and sculpture – many languages which in sum we call the language of architecture. It is precisely the complexity and strangeness of this language which makes it incumbent upon us to teach its main principles to every pupil, at every school level. We are not proposing that architecture be taught in the schools; but that the essence of this profession, which we encounter throughout life, and whose significance evades us, be brought to light.

Since architects are the ones who plan the structures in which educating is done, it seems that architecture – for all that it is a little known profession – is the ideal discipline for serving as the bridge to understanding and creating the common language which we so badly need.

Even if the public at large appears to have little understanding of the essence of this profession, each individual indeed has the desire to create, to put together, to build. Proof of this lies in the sand castles children build along the sea shore, the dolmens of primitive societies, and even the tremendous popularity of games involving various kinds of building blocks. The problem is that the natural, creative and constructive inclinations of the child which blossom in nursery school for some reason tend to wither in elementary school, and disappear altogether in high school.

The problem is how to continue, to encourage and develop the youngster's creative instincts, instead of repressing them.

Perhaps games with blocks can be used as teaching aids. Perhaps pupils should be given elements of walls, windows, and doors designed with a variety of finishes.

The youngster will learn to distinguish between a square room, an elongated one, or a rounded one; between one kind of window and another; between materials – hard or soft, brick or stone, paint or wallpaper;

between defined spaces and spaces which flow one into another; between interior and exterior; between a room and a balcony, a garden, stairwell, street, square, or city. We shall not educate pupils in architecture, but we shall give them certain fundamental concepts, the basic elements from which architecture is built.

This approach, of course, can be used to teach a considerable number of other subjects. Young people who have studied in this manner, it seems, will be citizens of a different quality, will set forth different programs, will be different teachers, different educators, and surely different architects. This differentness lies primarily in the common language which will be created to serve us..

In all that I have said thus far, my intention was but to point out the benefit which stands to be gained from contact and understanding between educators and architects. Close cooperation between them guarantees, in my opinion, the necessary, and essential, change from what we have now to what we hope for.

As for the educational facilities of today – some better and some worse – it has been shown that there is no clear correlation between their architectural quality and their pedagogical potential.

Many architects judge them for their photogenic quality, many teachers judge them primarily by the convenientness of the teachers' room and what goes along with it; whereas the students do not judge them at all, for lack of the tools to do so, for lack of that same language which I spoke of earlier. In the surveys run in Israel the students were vocal primarily on ventilation in the lavatories, and on the lack of shade in the schoolyard.

The question therefore arises: where do we go from here? How do we begin improving, until the common language essential for the education of

the citizen begins to be taught. I, personally, see little to be gained in annual or semi-annual symposia. Much more important, it seems, is to run a series of joint seminars between architects and educators. These seminars can be held in all sorts of educational facilities which could serve as fitting examples of the issue. The architect of the building can explain his structure, using his plans as well as guiding the group through the facilities themselves.

It might also be advisable to prepare an appropriate series of models of school facilities, and to use these models to explain the architectural structures, spaces, and spacial concepts. In the transitional period perhaps these models could also be used as teaching aids. Moreover, it might be a good idea to make a traveling exhibit of the models, bringing them to various schools. There the students in different classes would have an opportuneity to listen to explanations by the architects and perhaps even to offer their criticism.

One further point: when we purchase a car, a sewing machine, or a mixer, we receive an operating manual with designs and diagrams. But there is no such accompanying literature for school buildings. The architect of the structure should be required to prepare an explanatory booklet, in cooperation with the the principal of the educational institution. He should be invited to lecture before the teachers and students, to present his explanations and to respond to questions, including some which he may not find so pleasant.

It is very likely that until it be agreed to change the pedagogical program – should such a thing ever be agreed upon – the principals of the various institutions might initiate conversations between the student body and architects, as well as people in other professions – be it within normal school hours or as an extra-curricular activity studying such things as the

physical environment. I know that in quite a number of schools students have chosen to write papers about one or another type of architecture, in preparation for their final exams before graduation.

I believe that this natural inclination of the students can, and must, receive encouragement from school principals and educators. In conclusion we may say that cooperation will stem from closer contact, and will in turn lead to better understanding, benefiting the educators, architects, and – last but not least – the students, our citizens of the future.